

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claims 1-29 (canceled)

Claim 30. (new) A detergent composition comprising a mixture of methyl ester sulfonates comprising a first methyl ester sulfonate and a second methyl ester sulfonate, the second methyl ester sulfonate enriching the C₁₆ or C₁₈ methyl ester sulfonate concentration of the first methyl ester sulfonate.

Claim 31. (new) The detergent composition of claim 30, wherein the mixture is enriched for C₁₆ methyl ester sulfonates.

Claim 32. (new) The detergent composition of claim 30, wherein the mixture comprises at least about 25 weight percent of the second methyl ester sulfonate, based on the total weight percent of methyl ester sulfonates.

Claim 33. (new) The detergent composition of claim 30, wherein the mixture comprises at least about 35 weight percent of the second methyl ester sulfonate, based on the total weight percent of methyl ester sulfonates.

Claim 34. (new) The detergent composition of claim 33, wherein the mixture comprises at least about 50 weight percent of the second methyl ester sulfonate, based on the total weight percent of methyl ester sulfonates.

Claim 35. (new) The detergent composition of claim 34, wherein the methyl ester sulfonates are prepared from natural fats or oils.

Claim 36. (new) The detergent composition of claim 30, wherein the first methyl ester sulfonate is prepared from palm kernel oil, cohune oil or coconut oil, and the second methyl ester sulfonate is prepared from palm stearine oil or tallow.

Claim 37. (new) The detergent composition of claim 30, wherein the second methyl ester sulfonate comprises predominately C₁₆ chain lengths.

Claim 38. (new) The detergent composition of claim 30, wherein the first methyl ester sulfonate comprises C₈, C₁₀, C₁₂, C₁₄, C₁₆, and C₁₈ chain lengths and the second methyl ester sulfonate comprises predominately C₁₆ chain lengths.

Claim 39. (new) The detergent composition of claim 30, further comprising a nonionic surfactant, a cationic surfactant, another anionic surfactant, a zwitterionic surfactant, a polymer dispersant, an oxidizing agent, a biocidal agent, a foam regulator, a binder, an anticaking agent, an activator, a catalyst, a thickener, a stabilizer, a UV protector, a fragrance, a soil suspending agent, a filler, a brightener, an enzyme, a salt, or an inert ingredient.

Claim 40. (new) The detergent composition of claim 39, comprising a nonionic surfactant, a builder and an enzyme.

Claim 41. (new) A detergent composition comprising at least about 15 weight percent of a mixture of methyl ester sulfonates and having a C₁₆-enriched methyl ester sulfonate concentration.

Claim 42. (new) The detergent composition of claim 41, wherein the mixture comprises a first methyl ester sulfonate comprising C₈, C₁₀, C₁₂, C₁₄, C₁₆, and C₁₈ chain lengths and a second methyl ester sulfonate comprising predominately C₁₆ chain lengths.

Claim 43. (new) The detergent composition of claim 42, wherein the mixture comprises at least about 35 weight percent C₁₆ chain lengths.

Claim 44. (new) The detergent composition of claim 43, wherein the mixture comprises at least about 50 weight percent C₁₆ chain lengths.

Claim 45. (new) The detergent composition of claim 41, further comprising a nonionic surfactant, a cationic surfactant, another anionic surfactants, a zwitterionic surfactants, a polymer dispersant, an oxidizing agent, a biocidal agent, a foam regulator, a binder, an anticaking agent, an activator, a catalyst, a thickener, a stabilizer, a UV protector, a fragrances, a soil suspending agent, a filler, a brightener, a enzyme, a salt, or an inert ingredient.

Claim 46. (new) The detergent composition of claim 45, comprising a nonionic surfactant, a builder and an enzyme.